

**WHAT IS CLAIMED IS:**

1. Liquid heating apparatus comprising:

5        a tank adapted to store therein a quantity of liquid to be heated,  
said tank having a plurality of contiguous vertical zones of unequal  
volumes; and

      a vertically spaced plurality of unequal wattage electrical heating  
structures extending into said tank, each electrical heating structure  
10    serving a different one of said zones, said electrical heating structures  
providing said zones with substantially equal heating wattage densities.

2. The liquid heating apparatus of Claim 1 wherein:

      said liquid heating apparatus is an electric water heater.

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3. The liquid heating apparatus of Claim 1 wherein:

      said electric heating structures are individually controlled.

4. The liquid heating apparatus of Claim 1 wherein:

20        each of said electrical heating structures is an individual electrical  
resistance type immersion heating element.

5. The liquid heating apparatus of Claim 1 wherein:

said zones comprise a top zone contiguous with a bottom zone and having a volume smaller than the volume of said bottom zone, and

said electrical heating structures comprise a top electrical heating structure serving said top zone and having a first wattage, and a bottom electrical heating structure serving said bottom zone and having a second wattage, the ratio of said first wattage to said second wattage being substantially identical to the ratio of the volume of said top zone to the volume of said bottom zone.

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6. The liquid heating apparatus of Claim 1 wherein:

said zones comprise a top zone contiguous with a bottom zone and having a volume larger than the volume of said bottom zone, and

said electrical heating structures comprise a top electrical heating structure serving said top zone and having a first wattage, and a bottom electrical heating structure serving said bottom zone and having a second wattage, the ratio of said first wattage to said second wattage being substantially identical to the ratio of the volume of said top zone to the volume of said bottom zone.

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7. The liquid heating apparatus of Claim 1 wherein:

said tank has at least three contiguous vertical zones of unequal volumes each being served by a different one of said electrical heating structures.

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8. An electric water heater comprising:

a tank adapted to store therein a quantity of water to be heated,  
said tank having a plurality of contiguous vertical zones of unequal  
volumes;

5 an insulating jacket structure surrounding said tank; and

a vertically spaced apart plurality of unequal wattage electrical  
heating structures horizontally projecting into the interior of said tank,  
each of said electrical heating structures extending along a bottom  
portion of and serving a different one of said zones, said electrical heating  
10 structures being sized to provide said zones with substantially equal  
heating wattage densities.

9. The electric water heater of Claim 8 wherein:

said electrical heating structures are individually controlled.

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10. The electric water heater of Claim 8 wherein:

each of said electrical heating structures is an individual electrical  
resistance type immersion heating element.

20 11. The electric water heater of Claim 8 wherein:

said zones comprise a top zone contiguous with a bottom zone and  
having a volume smaller than the volume of said bottom zone, and

said electrical heating structures comprise a top electrical heating  
structure serving said top zone and having a first wattage, and a bottom  
25 electrical heating structure serving said bottom zone and having a second  
wattage, the ratio of said first wattage to said second wattage being  
substantially identical to the ratio of the volume of said top zone to the  
volume of said bottom zone.

12. The electric water heater of Claim 8 wherein:

said zones comprise a top zone contiguous with a bottom zone and having a volume larger than the volume of said bottom zone, and

5        said electrical heating structures comprise a top electrical heating structure serving said top zone and having a first wattage, and a bottom electrical heating structure serving said bottom zone and having a second wattage, the ratio of said first wattage to said second wattage being substantially identical to the ratio of the volume of said top zone to the  
10        volume of said bottom zone.

13. The electric water heater of Claim 8 wherein:

said tank has at least three contiguous vertical zones of unequal volumes each being served by a different one of said electrical heating  
15        structures.

14. An electric water heater comprising a water storage tank having unequal volume interior zones respectively served by spaced apart unequal wattage electrical heating structures extending into the interior of the tank and providing said zones with substantially equal heating  
5 wattage densities.

15. The electric water heater of Claim 14 wherein:  
said unequal volume interior zones are contiguous vertical zones,  
and  
10 said unequal wattage electrical heating structures extend horizontally into the interior of said tank.